

Report on two species of noctuid moths (Lepidoptera, Noctuidae s.l.) new to China and one new record species in Continental fauna

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Abstract: This paper reports two noctuid moths, *Atrachea japonica* (Leech, 1889) and *Autographa macrogamma* (Eversmann, 1842) that are new to the Chinese fauna. They are distributed in Tahe County in Daxing'anling forest region, China. In addition, a new record species, *Neustrotia rectilineata* Ueda, 1987, which is described from Mt. Sudo-san, Korea and Hotso, Prov. Taiwan, is newly added to continental fauna of the family Noctuidae s.l.. The external characteristics, genitalia photos, and the distributional ranges of those species are provided, and all the materials examined in this study are deposited in the collection of the Entomological Laboratory, Forestry college of Northeast Forestry University, Harbin, China.

Keywords: New record; Noctuidae; Systematics: China

Introduction

Many studies on the family Noctuidae had been conducted by Chinese entomologists during 1990–2006 (Chang 1991; Chen, 1999; Han *et al.* 2003, 2005a, 2005b, 2006; Wang 1993, 1994, 1995a, 1995b; Wang and Huang, 2005), especially, the intensive study of Isl. Taiwan's fauna and old material of the Hōne collection from China were mainly made by Japanese, Hungarian and Russian entomologists (Kononenko 2001, 2005a, 2005b; Kononenko & Ronkay, 2000, 2001; Owada, 1994a, 1994b, 1994c; Ronkay 2005, Ronkay & Ronkay 2000; Yoshimatsu & Hreblay 1998; Yoshimoto 2001), and recently, the Japanese entomologists started to research Mt. Nanling, Prov. Guangdong (Kobayashi *et al.* 2004; Owada *et al.* 2003a, 2003b). To date more than 2 300 species of the family Noctuidae *sensu lato* have been known from China.

The present paper reports two noctuid moths, *Atrachea japonica* (Leech, 1889) and *Autographa macrogamma* (Eversmann, 1842) that are new to the Chinese fauna. They are distributed in Tahe County in Daxing'anling forest region, China. Meanwhile, the species, *Neustrotia rectilineata* Ueda, 1987, described from Mt. Sudo-san, Korea and Hotso, Prov. Taiwan, is firstly reported from continental fauna in the world.

The external characteristics, genitalia photos, and the distributional ranges are also provided in this study. All the materials examined in this study are deposited in the collection of the Entomological Laboratory, Forestry College of Northeast Forestry University, Harbin, China.

Systematic accounts

Newly reported species from China

Atrachea japonica (Leech, 1889) (Figs. 1, 4)

Euplexia japonica Leech, 1889, Proc. Zool. Soc. Lond 1889: 504, pl. 51: 4. (TL: Japan, Hakodate [BMNH]).

Hadena succinta Graeser, [1889]1890.

Diagnosis (Fig. 1): Wingspan 32 mm. This species is superficially similar to *E. albolineola* (Wileman & South), but can be distinguished by the following characteristics: body brownish pale; ordinary spots blurred; forewing with a dark band between cell and 2A vein.

Male genitalia (Fig. 4): Uncus short, gently curved inwardly. Valva thickened, relatively straight; ampulla present, slender swollen at distal; costal process strong, well sclerotized; corona round with much short hair. Aedeagus slender, straight; vesica incurved, with two well sclerotized cornuti: longer one at terminal part; the other close to basal part of v-iseca.

Materials examined: 1 ♂, Tahe, Prov. Heilongjiang, 14 VIII 1992- coll. Northeast Forestry University.

Distribution: China (Heilongjiang), Russia (RFE), Japan (Honshu).

Remarks: This species only appeared from September to October every year in Japan (Sugi, 1982), from August to September in Russian Far East Kononenko, 1986).

Autographa macrogamma (Eversmann, 1842) (Figs. 2, 5)

Plusia macrogamma Eversmann, 1842, Bull. Soc. Imp. Nat. Moscow 1842(3): 554. (TL: Russia, Bashkiria; Ural [ZI]).

Diagnosis (Fig. 2): Wingspan 38 mm. This species is superficially similar to *A. buraetica* (Staudinger), but can be distinguished by the following characteristics: forewing ground color yellowish pale, less with dark brown color; subterminalline blurred at middle part; stigma big.

Male genitalia (Fig. 5): Uncus long, slender, and hook shaped. Valva flat; cost smoothly curved 3/4 of terminal; harpe slender,

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curved at basal part. Juxta drip shaped. Saccus "V" shaped. Aedeagus common, caecum swollen, carina with very more pellet circle band. Visca slender, straight and long, terminal part with a sclerotized cornuti.

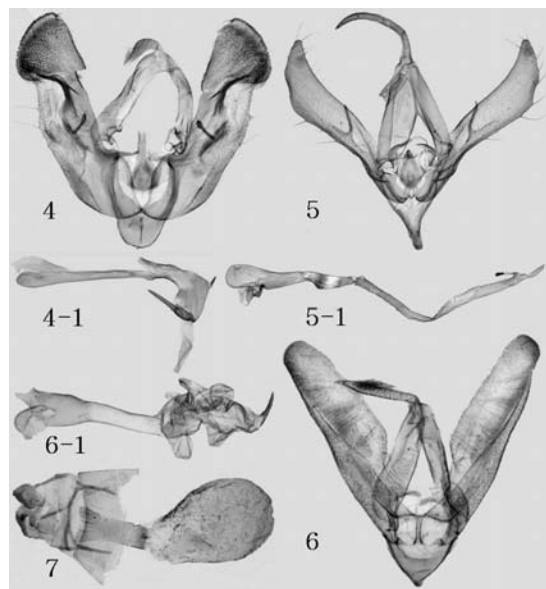
Materials examined: 1♂, Tahe, Prov. Heilongjiang, 27 VII 1993- coll. Northeast Forestry University.

Distribution: China (Heilongjiang), Russia (RFE, Siberia), Mongolia.

Remarks: The host plant of this species are various low herbs, *Trollius*, *Taraxacum* and *Plantago*, and shrubs, species of *Sorbus*. The moths are attracted to flowers during the evening and night, especially *Chamerion*, *Silene*, *Vicia* and *Lathyrus*. And it is typical of the conifer woodlands of the taiga zone (Goater, *et al.* 2003).



Figs. 1-3. Adult: 1. *Atrachea japonica* (Leech); 2. *Autographa macrogamma* (Eversmann); 3. *Neustrotia rectilineata* Ueda.



Figs. 4-7 Genitalia (4-6 male; 7 female): 4. *Atrachea japonica* (Leech); 5. *Autographa macrogamma* (Eversmann); 6-7. *Neustrotia rectilineata* Ueda.

New record from Continental fauna

Neustrotia rectilineata Ueda, 1987 (Figs. 3, 6-7)

Neustrotia rectilineata Ueda, 1987, Bull. Kitakyushu Mus. Nat. Hist. 6: 78, figs. 66, 67, 88-C (TL: Taiwan: Hotso; Korea:

Kyongsangbug-do, Mt. Sudo-san [MNH, Kitakyushu]).

Diagnosis (Fig. 3): This species is similar to *N. noloides* and *N. sugii*, but can be distinguished by the forewing characters: post-medial line below vein 3 more or less straight; postmedial area suffused with dark brown below costa and below vein 6.

Male genitalia (Fig. 6): Uncus common, with some short hair 1/3 of distal. Valva simple; saccus processes evolution; corona round. Saccus "V" shaped, slightly sclerotized. Aedeagus straight, swollen at caecum. Vesica membranous, with 5 diverticula, among them median diverticulum with a strongly sclerotized cornuti.

Female genitalia (Fig. 7): Papillae anales short. Apophysis short. Ostium bursae broadly. Ductus bursae as long as 1/2 times of corpus bursae, flattend, and slightly sclerotized. Corpus bursae membranous, oval shaped, with many small pellets.

Materials examined: 1♂, 1♀, Shangzhi, Prov. Heilongjiang, 7 VII 1976- coll. NEFU.

Distribution: China (Heilongjiang, Taiwan), Korea.

Remarks: This species is only appeared in its type locality, south part of the Korean Peninsula and Isl. Taiwan to date. In this study, the species will added into Continental Noctuidae s.l. fauna. And the species was collected in Shangzhi which is closed to Harbin City, Prov. Heilongjiang, China, where maybe the Northernmost border of the species.

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